

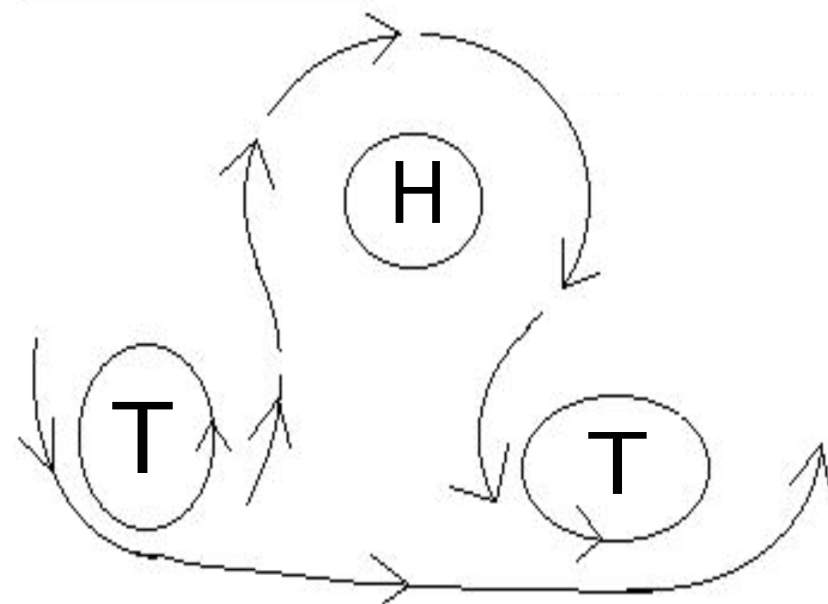


zu warm – zu trocken – zu nass

Großwetter im Wandel

Peter Hoffmann

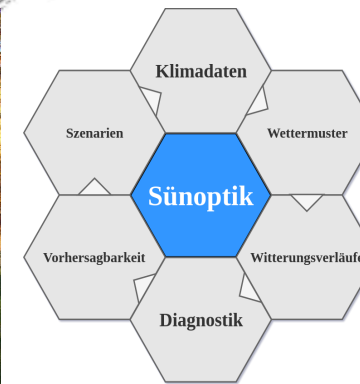
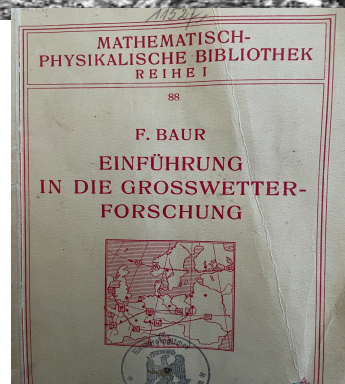
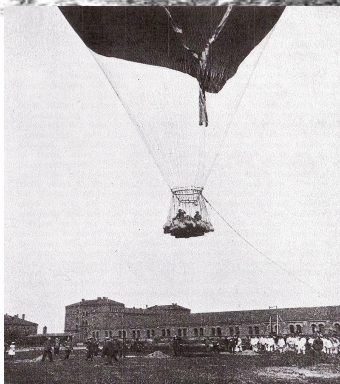
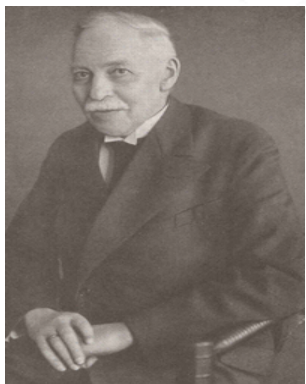
Hydroklimatische Extreme





Telegrafenberg

ehem. Meteorologisches Observatorium





Süringwarte

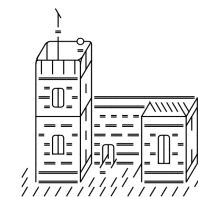
operationelle Auswertungen

der

aktuellen Witterungsverläufe

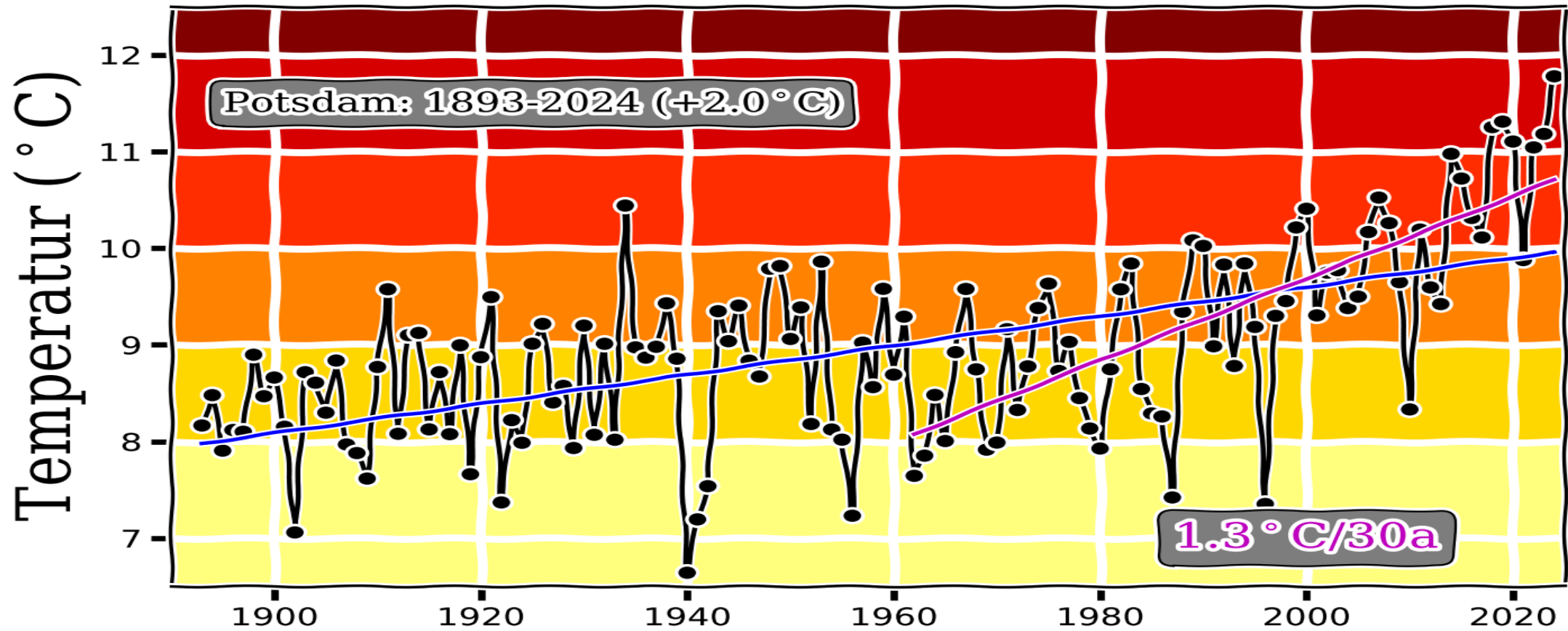
und

Klimafolgen



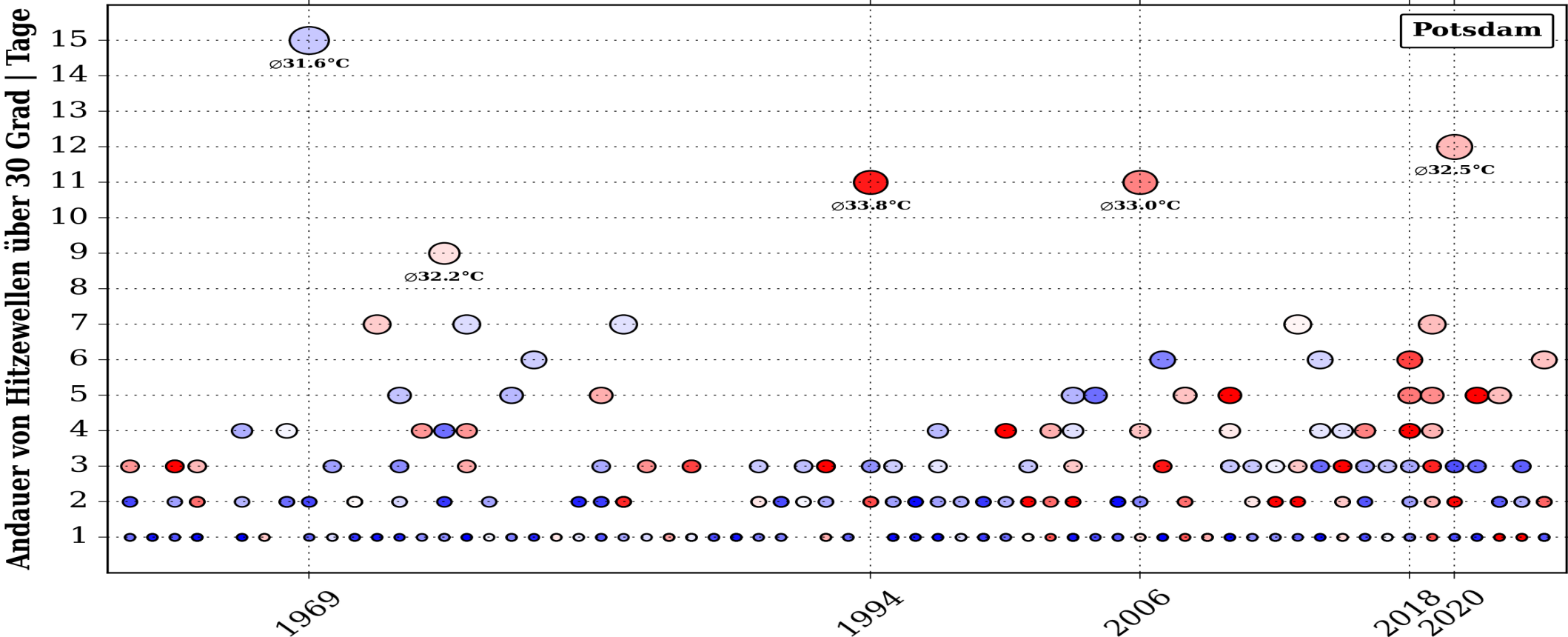


Säkulare Klimamessreihe





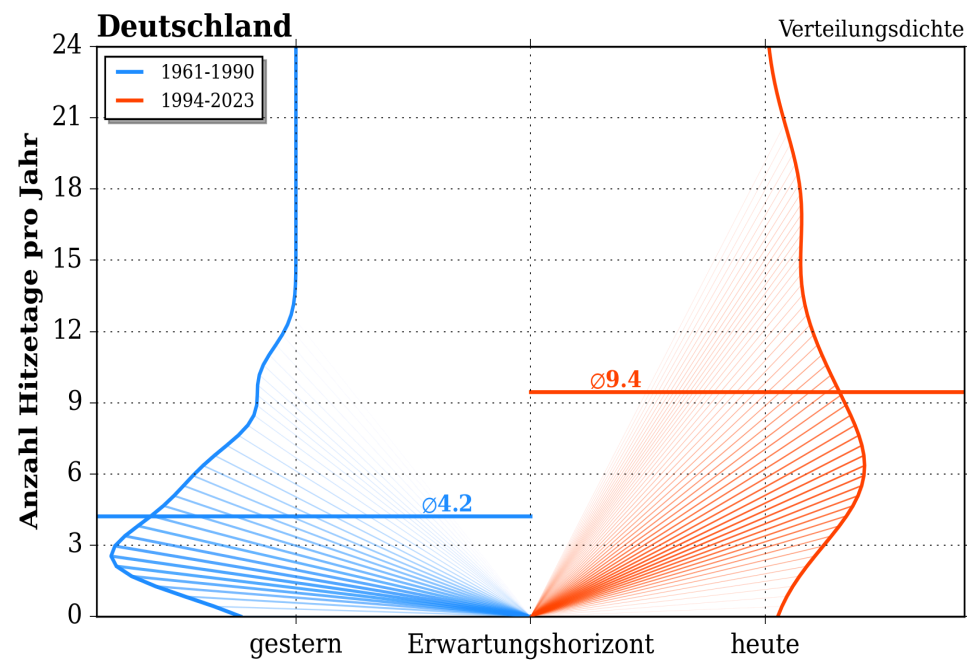
Hitzewellen



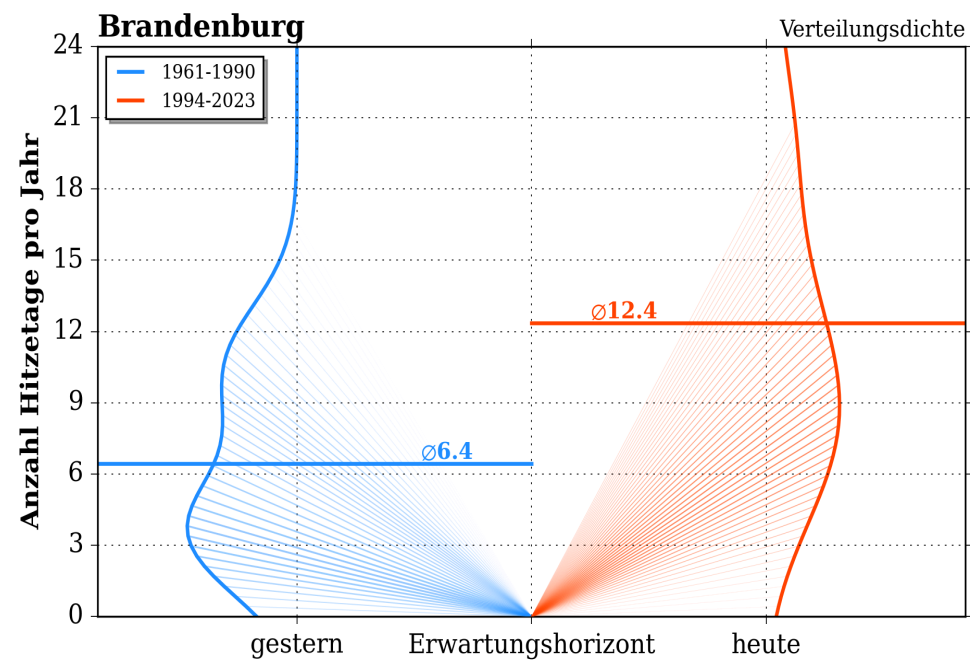


Erwartungshorizont für Hitzetage

Deutschland

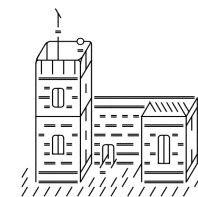
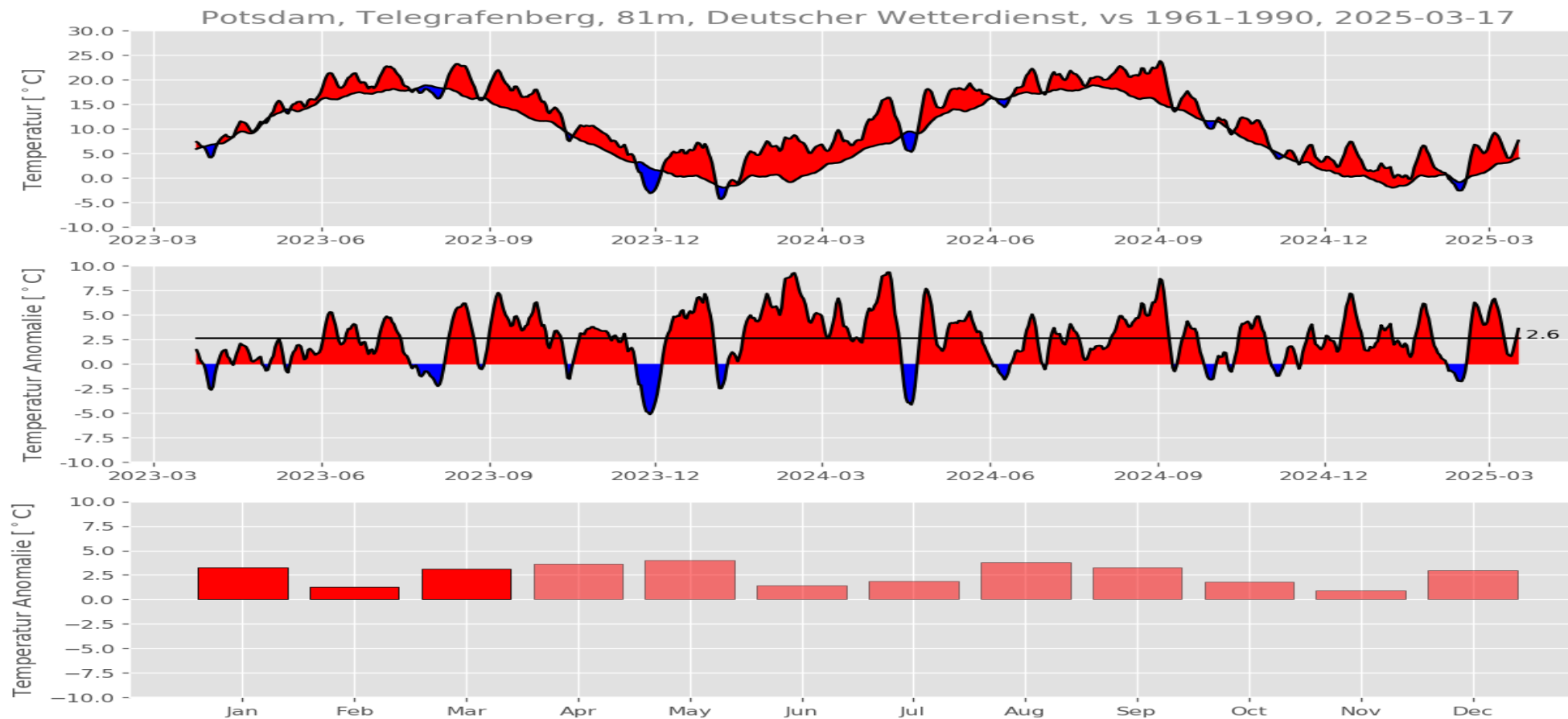


Brandenburg





Aktuelle Witterungsverläufe im zeitlichen Kontext



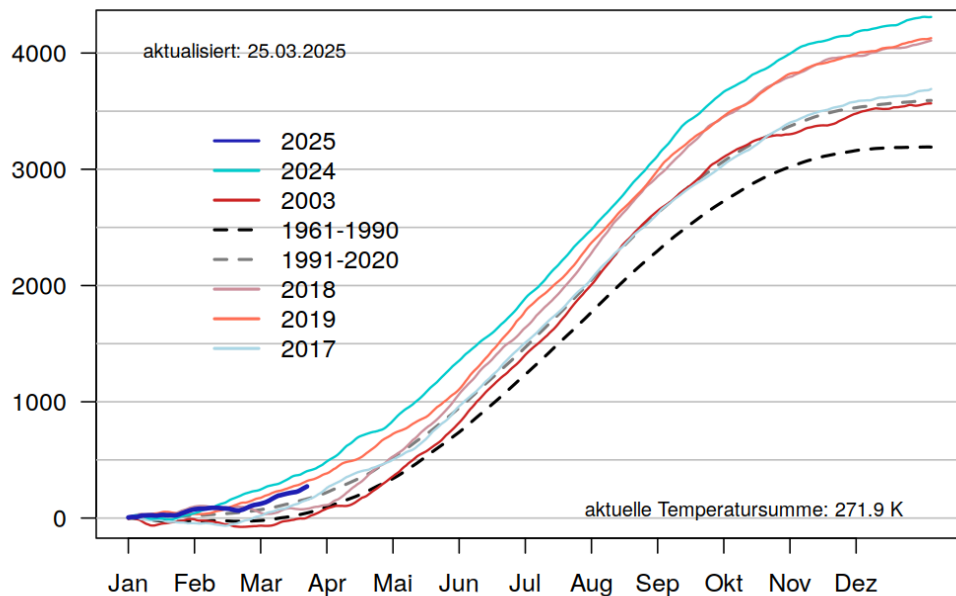


Aktuelle Witterungsverläufe im zeitlichen Kontext

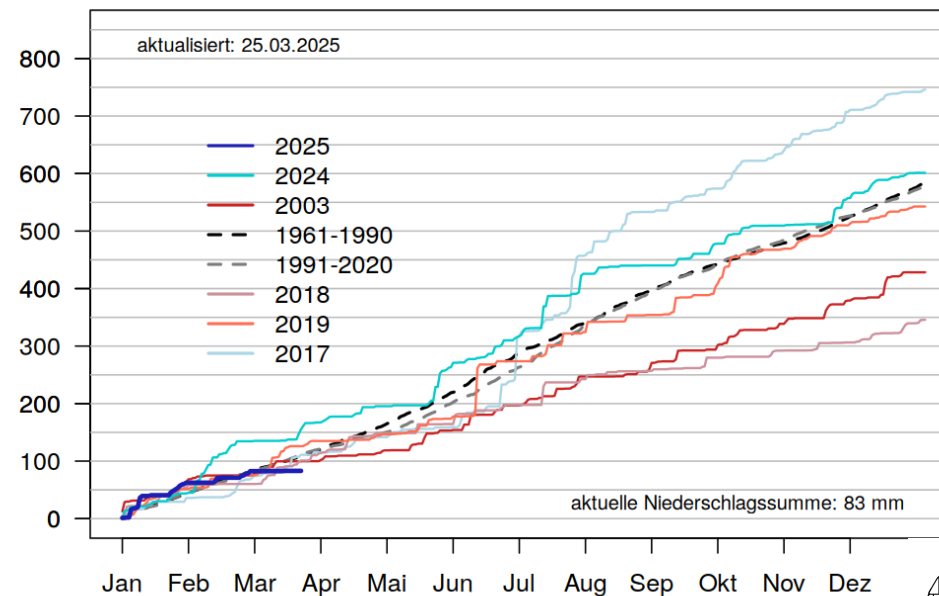
Temperatursumme

Regensumme

°C Tagesmitteltemperatur - kumulativ Jahresgang



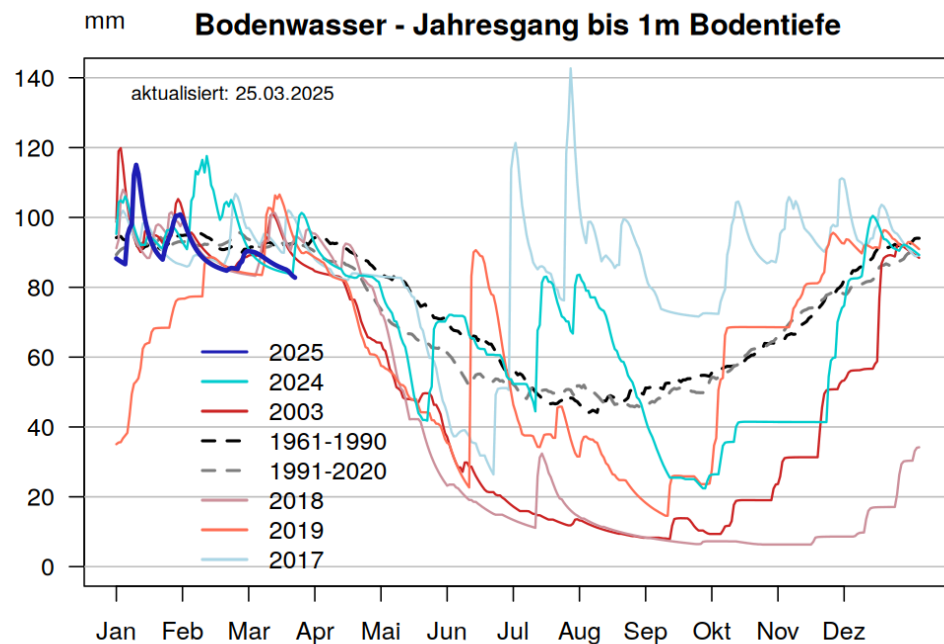
mm Niederschlag - kumulativ Jahresgang



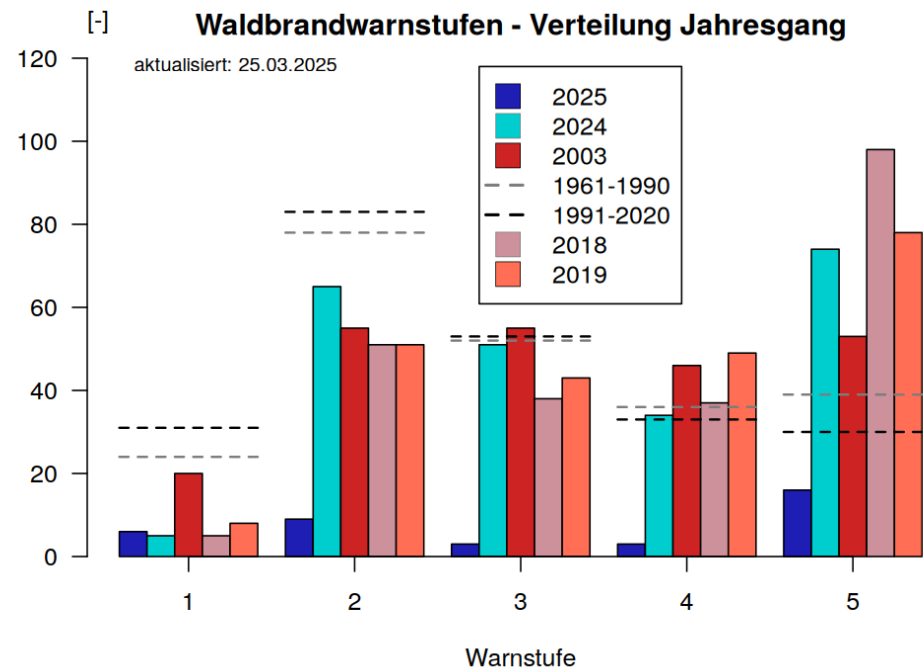


Aktuelle Witterungsverläufe im zeitlichen Kontext

Bodenwasser

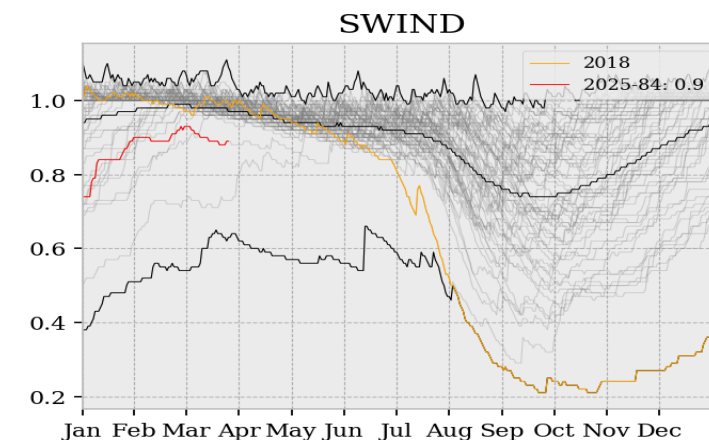
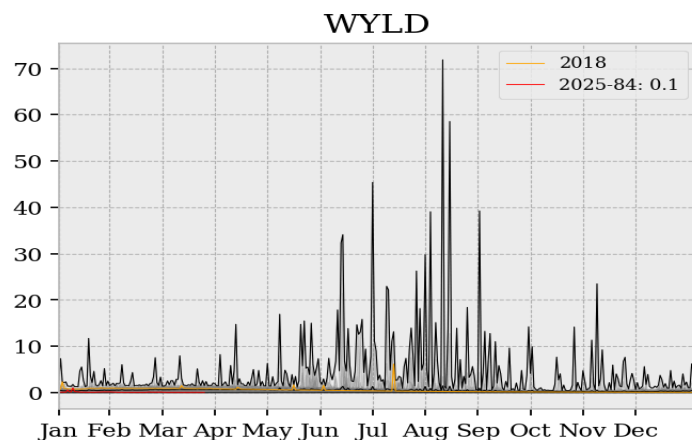
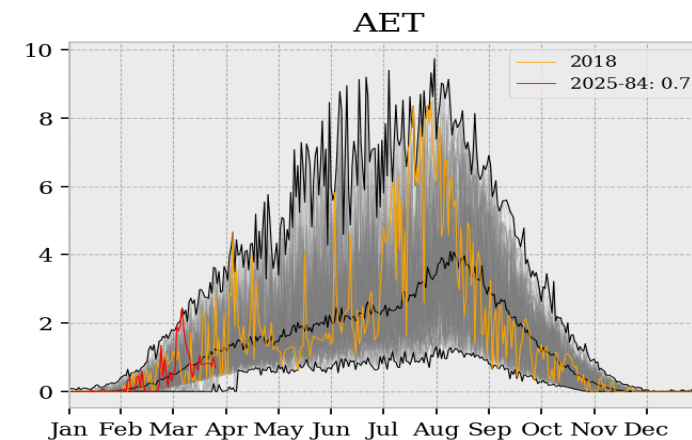
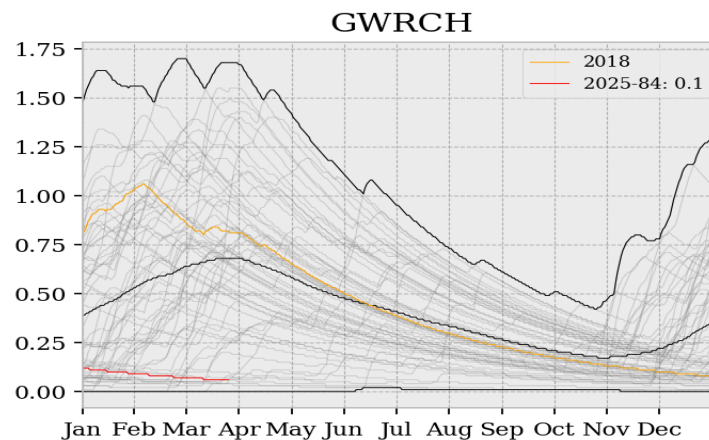
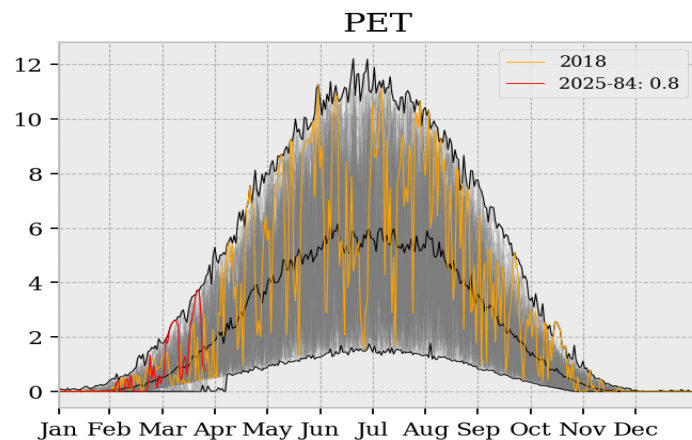


Waldbrandindex



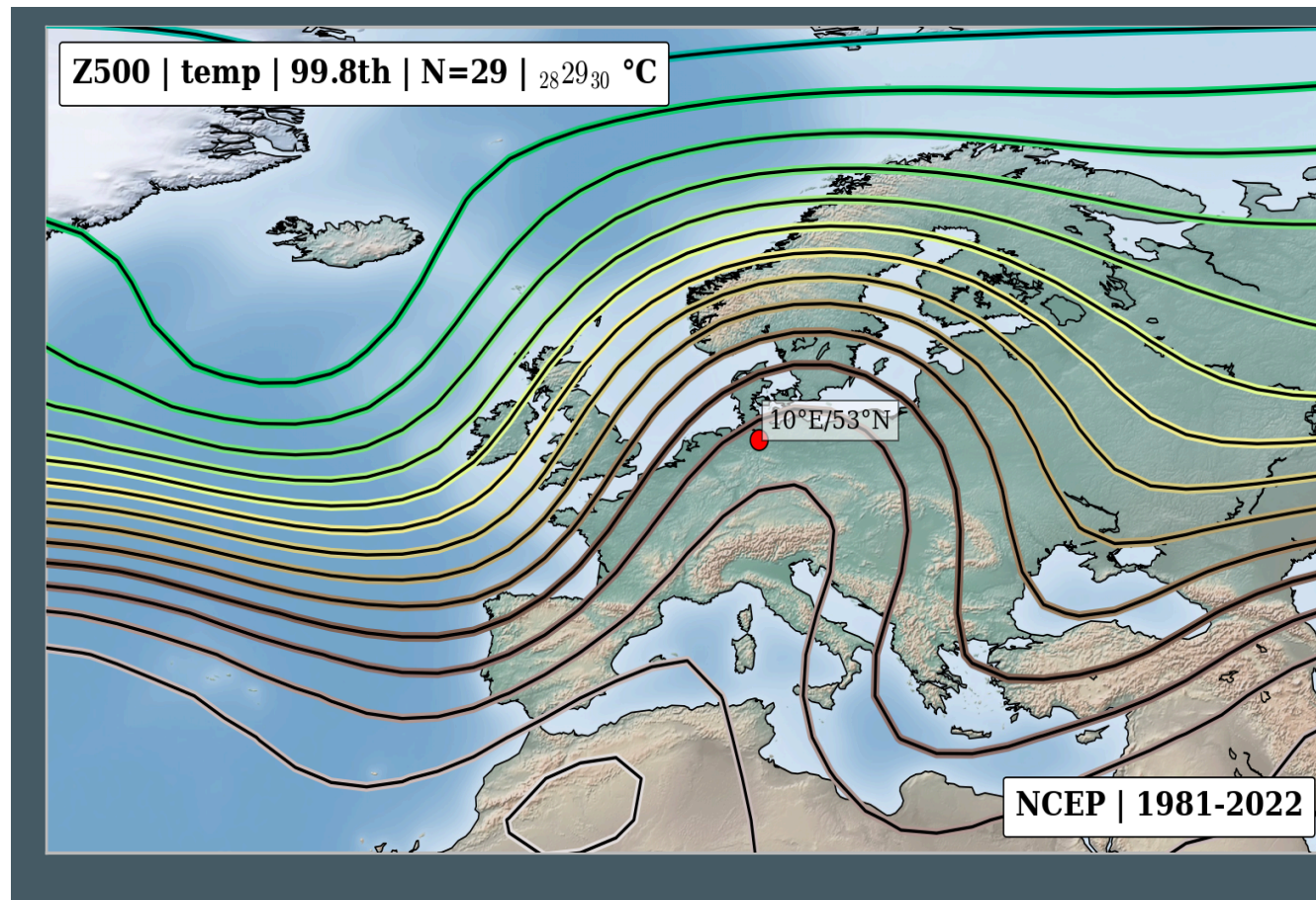


Aktuelle Witterungsverläufe im zeitlichen Kontext



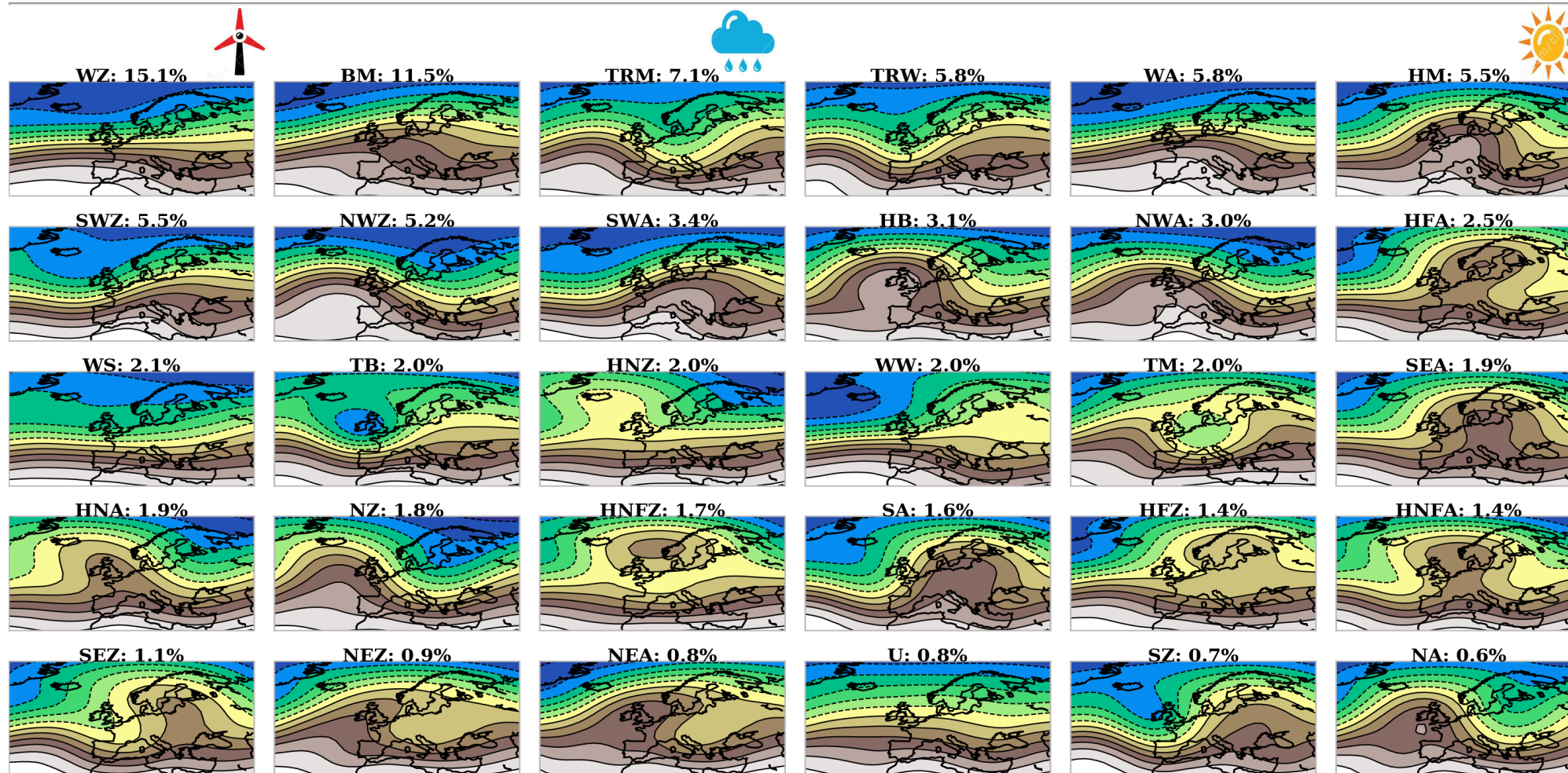


Aktuelle Witterung im großräumigen Kontext





Katalog von Großwetterlagen





Lokaler Witterungscharakter - Potsdam

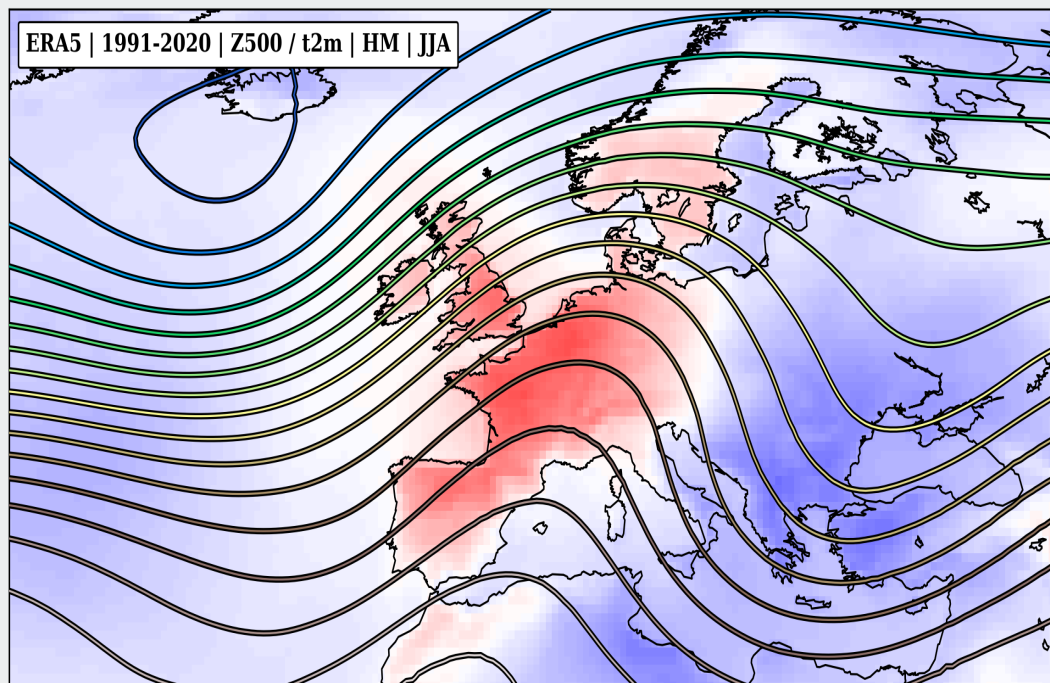
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|---|------|------|------|------|------|------|------|------|------|------|------|------|
| NA | -4.5 | -0.1 | 0.9 | 6.9 | 10.1 | 15.1 | 17.9 | 14.7 | 11.3 | 8.4 | 4.9 | -0.9 |
| SZ | -1.8 | 1.9 | 6.7 | 15.2 | 18.8 | 23.3 | 21.7 | 22.1 | 16.6 | 10.1 | 5.2 | 1.3 |
| U | -1.5 | 0.2 | 2.6 | 7.8 | 14.3 | 18.5 | 18.6 | 17.8 | 14.4 | 9.5 | 4.5 | -2.1 |
| NEA | 1.2 | -2.5 | -0.2 | 8.6 | 13.4 | 17.2 | 19.2 | 20.0 | 14.7 | 7.8 | 1.1 | 1.0 |
| HNFA | -7.3 | -4.5 | 0.8 | 9.6 | 15.9 | 20.1 | 21.7 | 19.6 | 11.4 | 5.8 | -3.3 | -1.5 |
| NEZ | -2.2 | -1.5 | 1.6 | 7.6 | 10.8 | 16.2 | 19.3 | 17.9 | 12.9 | 6.5 | 2.3 | -1.2 |
| SA | -2.3 | 1.5 | 6.4 | 14.2 | 17.3 | 21.1 | 24.6 | 23.3 | 17.4 | 11.0 | 6.3 | 0.6 |
| HFZ | -6.4 | -2.0 | 0.4 | 8.8 | 15.3 | 19.6 | 21.7 | 19.9 | 15.0 | 8.9 | 1.0 | -2.7 |
| TM | 0.8 | -3.6 | 2.3 | 6.0 | 13.6 | 15.4 | 18.5 | 18.0 | 12.7 | 8.3 | 3.0 | 0.2 |
| HNZ | -5.9 | -4.5 | 1.0 | 5.7 | 12.8 | 16.8 | 18.4 | 15.7 | 12.5 | 6.9 | 2.6 | -3.0 |
| TB | -0.4 | -0.3 | 5.4 | 10.6 | 14.8 | 17.5 | 19.2 | 19.4 | 15.0 | 11.8 | 6.5 | -1.6 |
| HNFA | -6.9 | -3.4 | 1.2 | 7.3 | 14.3 | 19.0 | 22.3 | 18.2 | 13.0 | 7.3 | 0.4 | -6.0 |
| NZ | -3.1 | -1.0 | 1.7 | 4.4 | 9.8 | 13.2 | 15.2 | 14.4 | 11.6 | 6.0 | 0.6 | -1.6 |
| HNA | -8.1 | -5.0 | 2.0 | 8.0 | 12.8 | 17.5 | 19.6 | 19.2 | 12.0 | 5.7 | 1.8 | -5.2 |
| WW | 1.1 | 2.0 | 3.5 | 10.0 | 13.5 | 18.7 | 19.3 | 19.6 | 14.6 | 9.4 | 4.3 | 1.1 |
| WS | -1.5 | 0.6 | 2.3 | 7.9 | 12.5 | 15.3 | 15.1 | 15.4 | 12.2 | 8.4 | 4.1 | -0.2 |
| NWA | 2.4 | 5.1 | 5.9 | 9.6 | 10.9 | 15.3 | 17.1 | 15.9 | 12.9 | 10.0 | 4.4 | 2.8 |
| HFA | -4.9 | -4.1 | 0.7 | 8.9 | 14.9 | 17.9 | 21.6 | 20.4 | 13.5 | 7.2 | 2.4 | -3.9 |
| HB | -1.5 | -0.3 | 4.0 | 7.3 | 13.2 | 15.3 | 16.9 | 16.6 | 12.6 | 7.4 | 2.5 | 1.2 |
| SE | -4.4 | -1.5 | 4.4 | 13.1 | 16.4 | 21.5 | 22.5 | 20.5 | 16.0 | 8.7 | 2.7 | -1.7 |
| SWA | 2.2 | 6.3 | 8.3 | 14.7 | 17.7 | 20.0 | 21.5 | 20.5 | 17.7 | 12.9 | 6.6 | 4.0 |
| SWZ | 3.7 | 5.1 | 7.5 | 11.6 | 14.8 | 18.4 | 20.7 | 20.3 | 15.5 | 12.3 | 8.4 | 3.6 |
| NWZ | 1.3 | 1.8 | 3.1 | 6.5 | 10.0 | 13.1 | 14.9 | 14.7 | 12.5 | 8.8 | 4.1 | 2.1 |
| TRW | 1.1 | 1.9 | 6.4 | 10.2 | 14.5 | 17.9 | 20.2 | 19.5 | 15.6 | 9.4 | 5.4 | 0.5 |
| WA | 4.1 | 4.3 | 7.6 | 10.4 | 13.9 | 17.3 | 18.8 | 18.3 | 14.8 | 10.7 | 7.5 | 4.7 |
| TRM | -1.5 | -0.4 | 2.7 | 6.0 | 10.1 | 13.7 | 15.3 | 16.0 | 12.4 | 6.7 | 2.7 | -0.3 |
| HM | -2.0 | 1.4 | 5.0 | 11.2 | 15.4 | 19.7 | 19.9 | 18.0 | 15.3 | 7.5 | 3.3 | -0.8 |
| BM | -2.0 | -0.2 | 4.5 | 9.6 | 14.6 | 18.7 | 20.2 | 19.3 | 15.0 | 9.5 | 3.4 | -1.0 |
| WZ | 4.3 | 4.3 | 5.8 | 9.1 | 12.7 | 15.4 | 16.9 | 17.2 | 14.0 | 9.9 | 6.2 | 4.5 |
| Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NA | 1.2 | 1.7 | 0.2 | 0.4 | 1.9 | 0.6 | 0.7 | 0.8 | 0.7 | 1.1 | 0.6 | 2.1 |
| SZ | 0.4 | 0.3 | 0.5 | 1.8 | 1.9 | 2.4 | 1.8 | 2.1 | 2.2 | 1.3 | 0.5 | 2.6 |
| U | 0.7 | 1.0 | 0.5 | 1.3 | 2.8 | 2.9 | 3.0 | 1.0 | 1.1 | 1.0 | 3.9 | 1.4 |
| NEA | 2.0 | 0.8 | 0.2 | 0.4 | 0.7 | 0.3 | 0.0 | 0.7 | 0.3 | 0.5 | 0.4 | 0.4 |
| HNFA | 0.4 | 0.4 | 0.4 | 0.0 | 0.2 | 0.5 | 0.8 | 0.6 | 0.0 | 0.8 | 0.1 | 0.6 |
| NEZ | 0.7 | 1.0 | 0.7 | 1.2 | 2.1 | 1.8 | 4.4 | 3.7 | 1.8 | 1.9 | 1.1 | 2.6 |
| SA | 0.2 | 0.0 | 0.3 | 0.3 | 2.0 | 0.3 | 0.2 | 0.7 | 0.1 | 0.0 | 0.0 | 0.1 |
| HFZ | 0.7 | 0.8 | 1.8 | 1.0 | 1.6 | 1.4 | 2.4 | 1.1 | 3.1 | 1.2 | 1.1 | 1.1 |
| TM | 1.2 | 2.2 | 2.2 | 4.5 | 3.6 | 6.3 | 6.7 | 4.3 | 4.4 | 4.9 | 3.4 | 3.2 |
| HNZ | 1.6 | 1.3 | 2.5 | 1.1 | 2.5 | 2.2 | 2.2 | 3.4 | 1.7 | 1.8 | 0.2 | 0.7 |
| TB | 0.7 | 0.9 | 0.8 | 1.1 | 2.6 | 2.1 | 3.4 | 2.3 | 1.9 | 1.5 | 0.6 | 0.9 |
| HNFA | 1.0 | 1.1 | 0.1 | 1.0 | 1.5 | 2.0 | 2.8 | 4.2 | 2.5 | 2.2 | 2.9 | 1.0 |
| NZ | 2.0 | 1.3 | 2.0 | 1.2 | 1.8 | 2.2 | 5.0 | 6.0 | 2.9 | 1.8 | 2.4 | 2.1 |
| HNA | 0.3 | 0.5 | 0.0 | 0.3 | 0.3 | 0.8 | 0.3 | 0.3 | 0.7 | 0.8 | 0.1 | 0.3 |
| WW | 1.6 | 2.0 | 0.9 | 1.9 | 1.4 | 2.3 | 1.6 | 1.4 | 2.3 | 2.2 | 2.9 | 2.5 |
| WS | 1.1 | 1.3 | 2.7 | 2.8 | 2.7 | 3.1 | 3.3 | 2.5 | 3.6 | 2.7 | 2.9 | 2.3 |
| NWA | 1.3 | 1.1 | 0.7 | 0.4 | 0.5 | 2.0 | 1.0 | 0.5 | 0.9 | 0.9 | 0.9 | 0.7 |
| HFA | 0.1 | 0.1 | 0.1 | 1.0 | 0.3 | 0.3 | 0.7 | 0.9 | 0.5 | 0.4 | 0.2 | 0.2 |
| HB | 0.8 | 0.7 | 0.2 | 0.4 | 0.3 | 1.2 | 0.4 | 1.3 | 0.7 | 0.2 | 0.7 | 0.6 |
| SE | 0.2 | 0.2 | 0.4 | 0.8 | 1.6 | 1.8 | 0.3 | 0.9 | 0.3 | 0.6 | 0.5 | 0.4 |
| SWA | 0.6 | 0.3 | 0.7 | 0.6 | 0.8 | 1.5 | 0.6 | 0.4 | 0.5 | 0.4 | 0.4 | 0.7 |
| SWZ | 1.7 | 1.8 | 2.6 | 2.6 | 2.9 | 3.2 | 2.9 | 2.6 | 1.9 | 1.9 | 2.2 | 1.8 |
| NWZ | 2.8 | 2.9 | 2.5 | 1.8 | 2.1 | 3.2 | 2.9 | 2.6 | 3.3 | 3.4 | 2.5 | 3.3 |
| TRW | 1.1 | 0.7 | 1.2 | 1.3 | 2.9 | 4.1 | 3.1 | 2.4 | 2.2 | 1.1 | 1.4 | 1.1 |
| WA | 1.0 | 1.1 | 0.8 | 0.6 | 1.1 | 1.8 | 1.3 | 0.9 | 1.0 | 0.7 | 0.9 | 0.9 |
| TRM | 1.2 | 0.9 | 1.7 | 1.7 | 2.2 | 2.9 | 2.8 | 3.9 | 2.6 | 1.6 | 1.6 | 1.5 |
| HM | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.4 | 0.3 | 0.2 | 0.2 | 0.1 | 0.3 | 0.4 |
| BM | 0.6 | 0.5 | 0.4 | 0.3 | 0.7 | 1.2 | 0.7 | 1.0 | 0.6 | 0.6 | 0.5 | 0.3 |
| WZ | 2.9 | 2.7 | 2.3 | 2.1 | 2.4 | 2.9 | 2.8 | 2.5 | 2.4 | 2.5 | 2.5 | 3.1 |
| Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec | | | | | | | | | | | | |

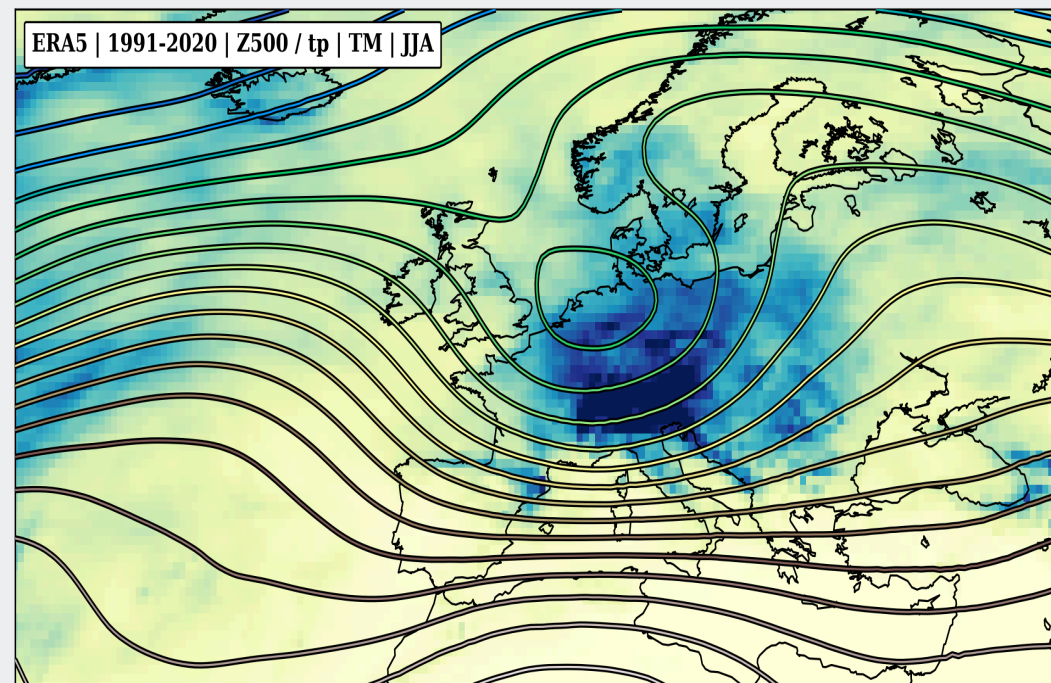


Regionaler Witterungscharakter

Hoch Mitteleuropa

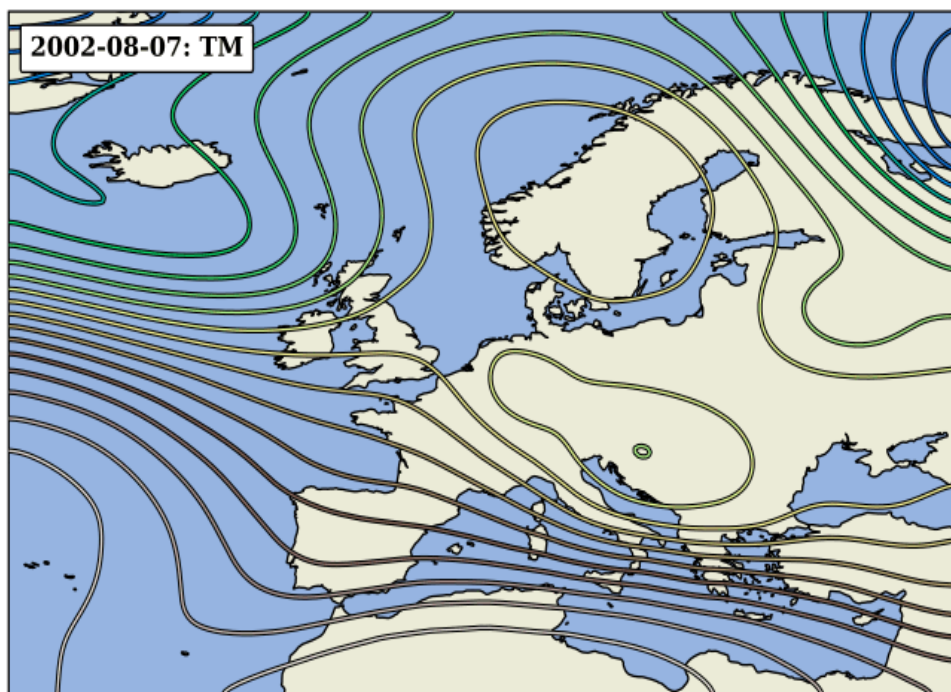


Tief Mitteleuropa





Kritische Abfolgen – August 2002



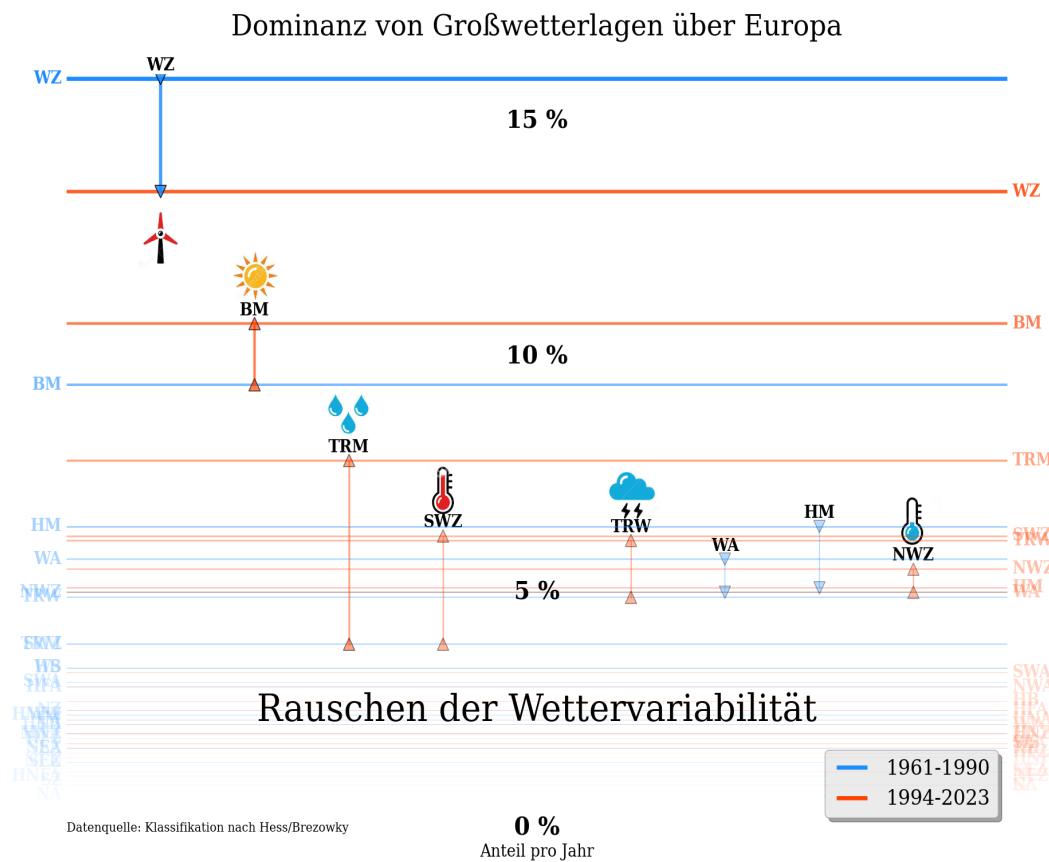


© P. Hoffmann (PIK)





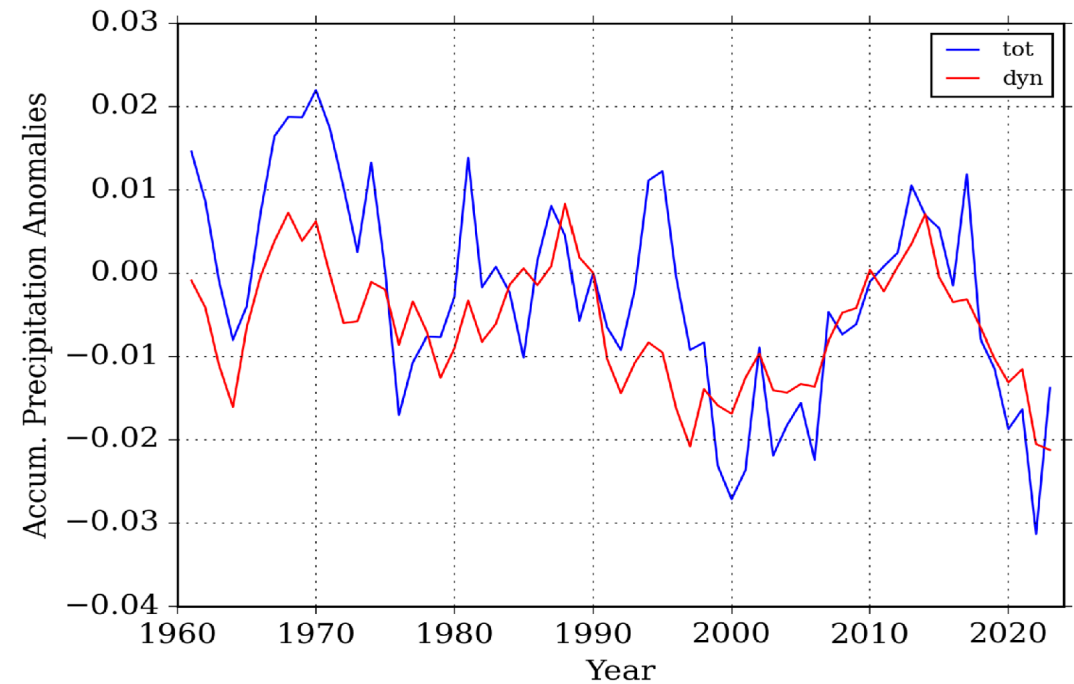
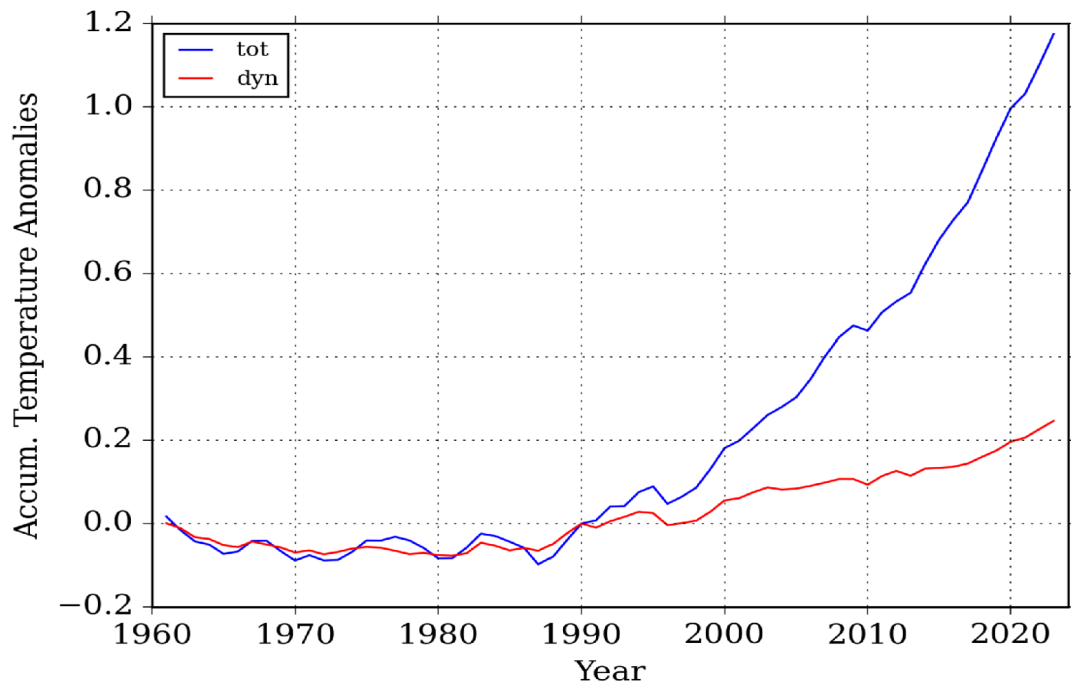
Warnsignal Klima – Wetterextreme





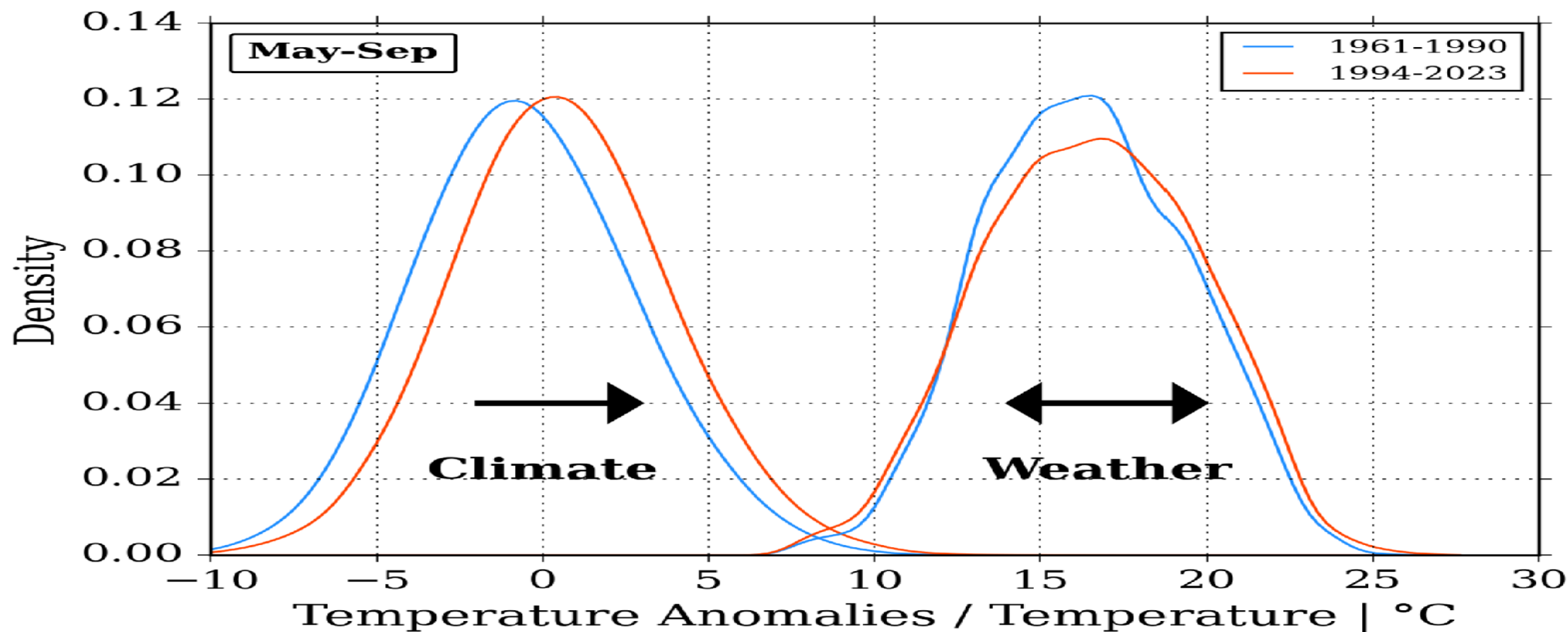
Hauptargument – f. Beschäftigung mit Großwetterlagen

Trennung des dynamischen (indirekten) Anteils am Klimawandel





Verschiebung der Verteilung für Klima und Wetter



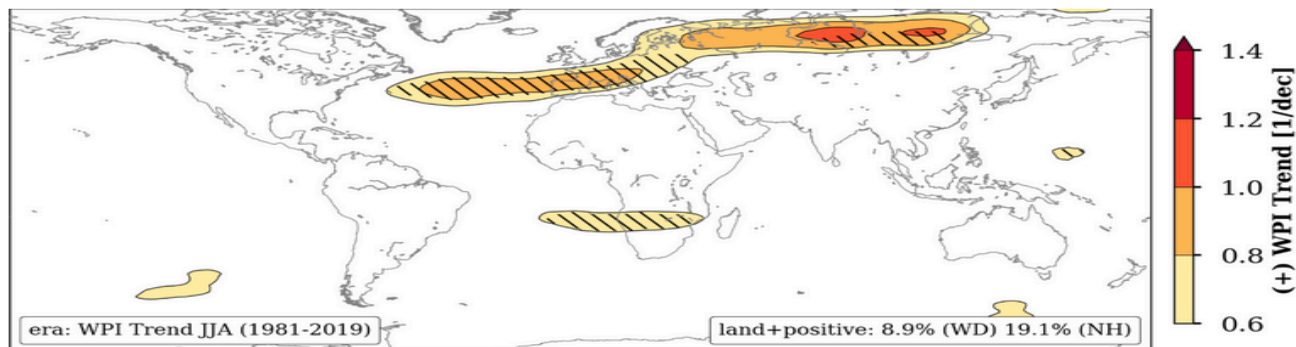


Zunahme der Wetterbeständigkeit – Sommer

HOME › NEWS › LATEST NEWS

Too dry, too hot, or too wet: Increasing Weather Persistence in European Summer

12/06/2021 - Global warming makes long lasting weather situations in the Northern hemisphere's summer months more likely – which in turn leads to more extreme weather events, a novel analysis of atmospheric images and data finds. These events include heatwaves, droughts, intense rainy periods. Especially in Europe, but also in Russia, persistent weather patterns have increased in number and intensity over the last decades with weather extremes occurring simultaneously at different locations.



Regions of the world where an increase in persistent weather conditions is observed in summer (Jun-Aug). Photo: PIK Potsdam.



New Project: ArboKlim 2025-2028 (EFRE staF)

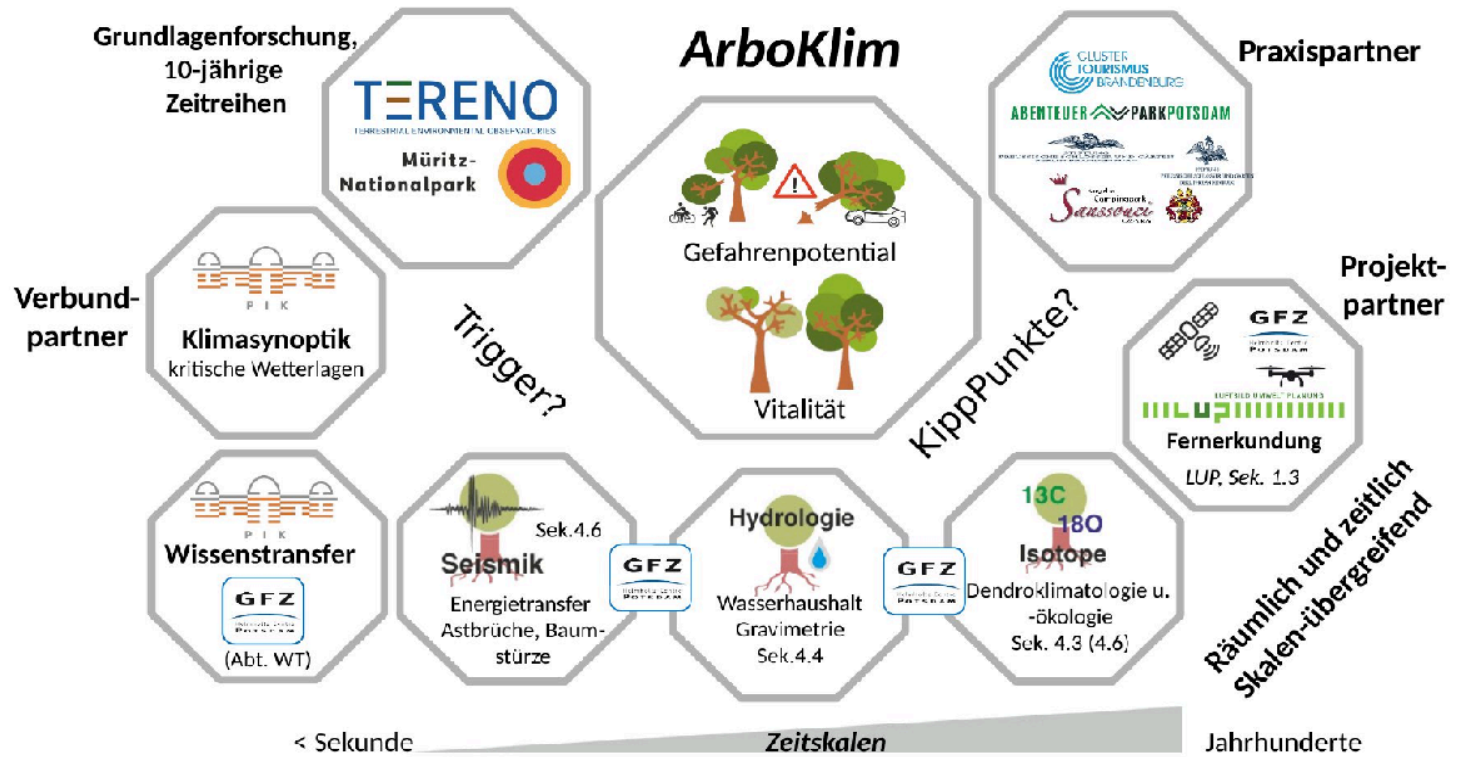
Im Spannungsfeld der Klimafolgen: Potsdam als Reallabor für innovatives Monitoring

Antragsteller: **GFZ**: T. Blume (4.4), G. Helle (4.3), N. Hovius (4.6), **PIK**: P. Hoffmann (HyR)

Praxispartner: TourismusCluster Brandenburg, Stadt Potsdam, Stiftung Preussische Schlösser und Gärten Berlin-Brandenburg, AbenteuerPark Potsdam, RECRA - Freizeit-recra GmbH, Königlicher Campingpark Sanssouci, Luftbild Umwelt Planung GmbH, Potsdam

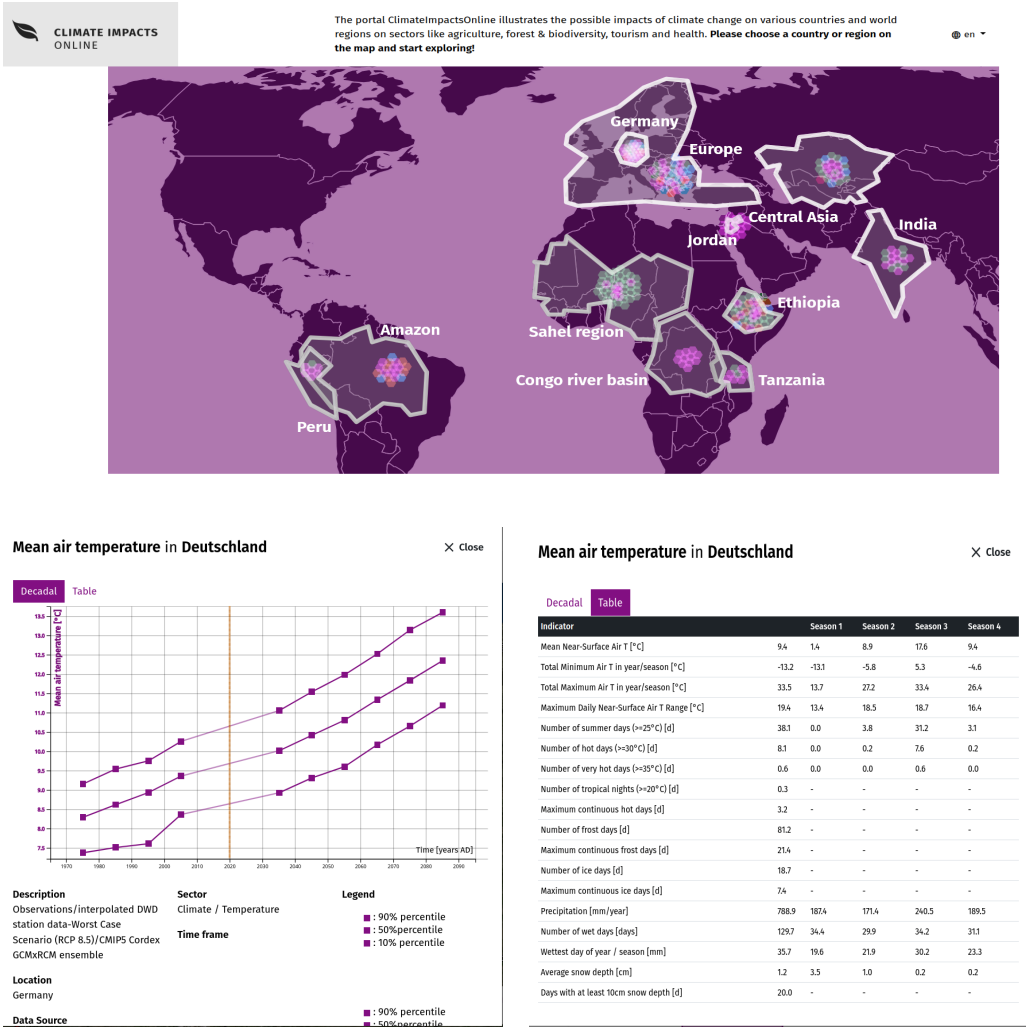
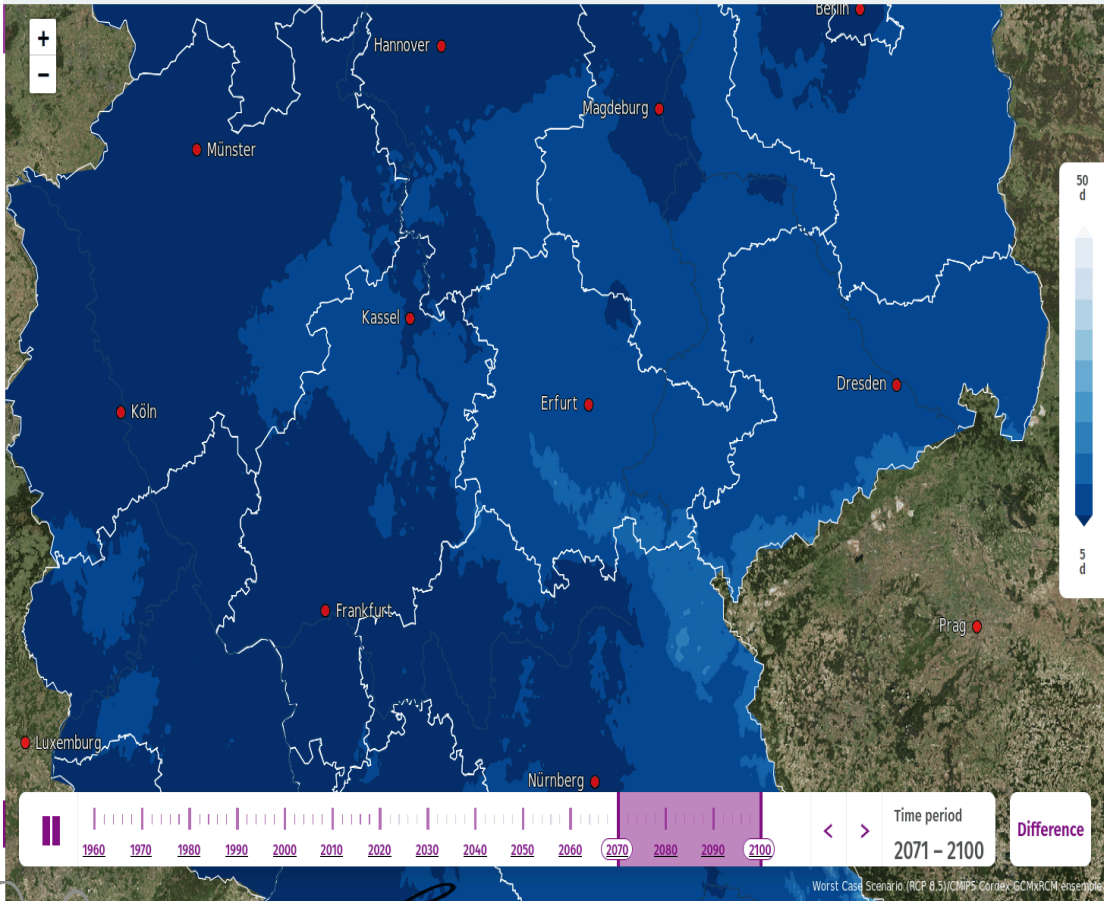


Warnschild: Eingang Park Sanssouci, Aug2024





Klimafolgenonline – Wissenstransfer



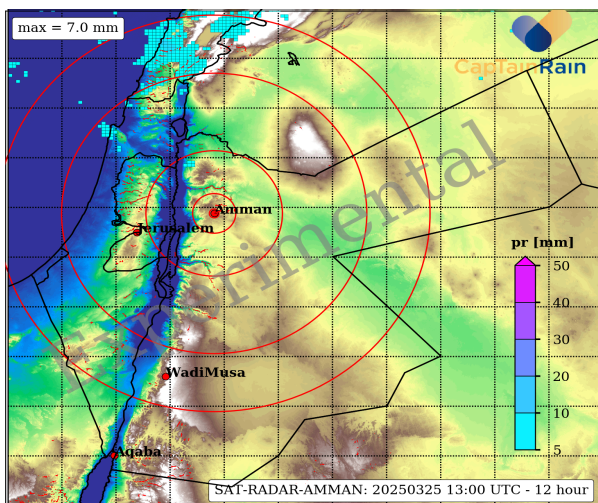
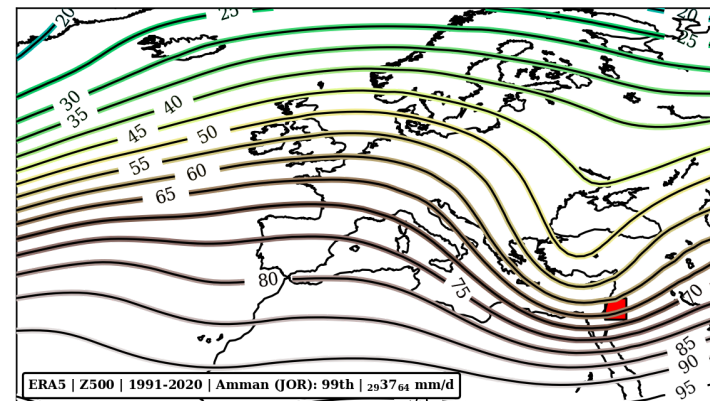
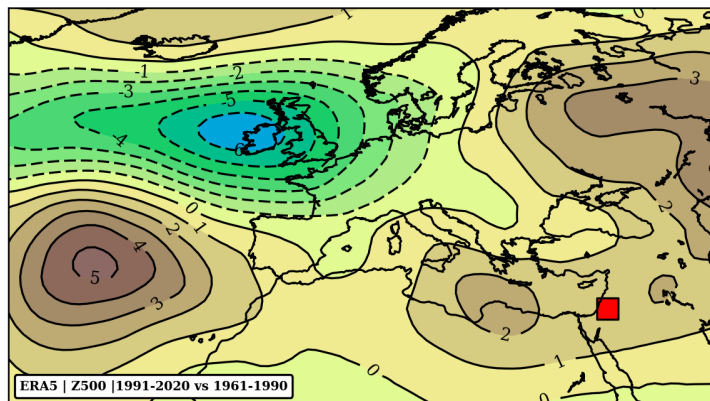
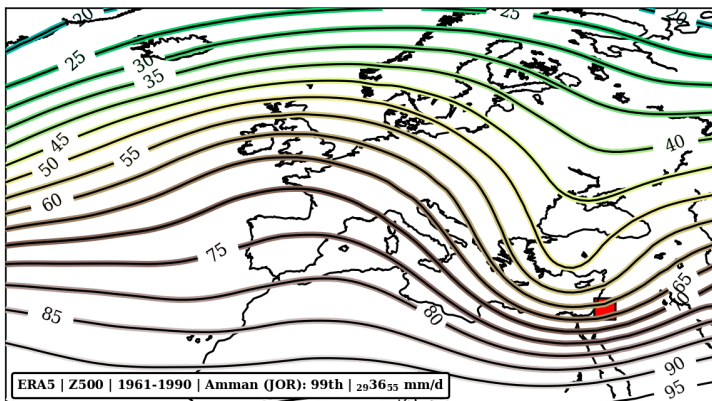


Starkregen in Jordanien - östliches Mittelmeer

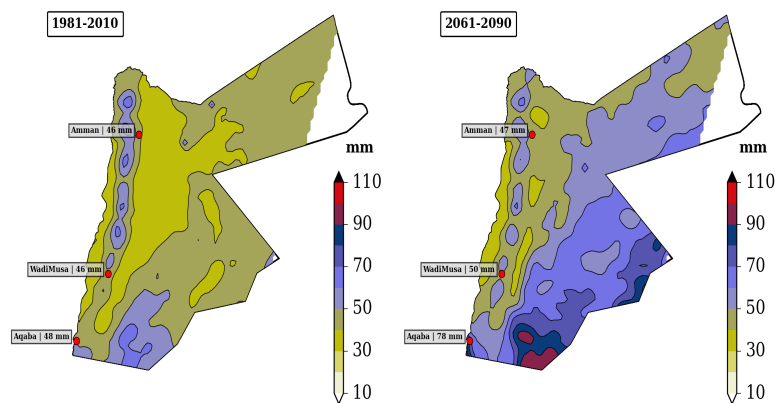




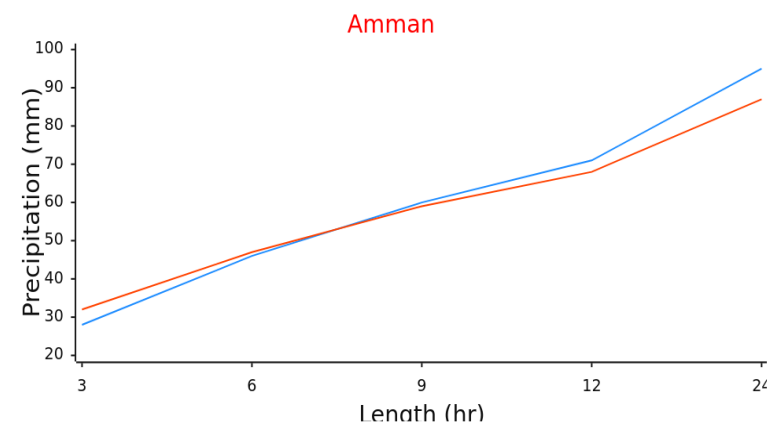
Ausgewählte Ergebnisse



CORDEX-RCP85 | PR = 6-hr | RetLev = 50-yr



Amman



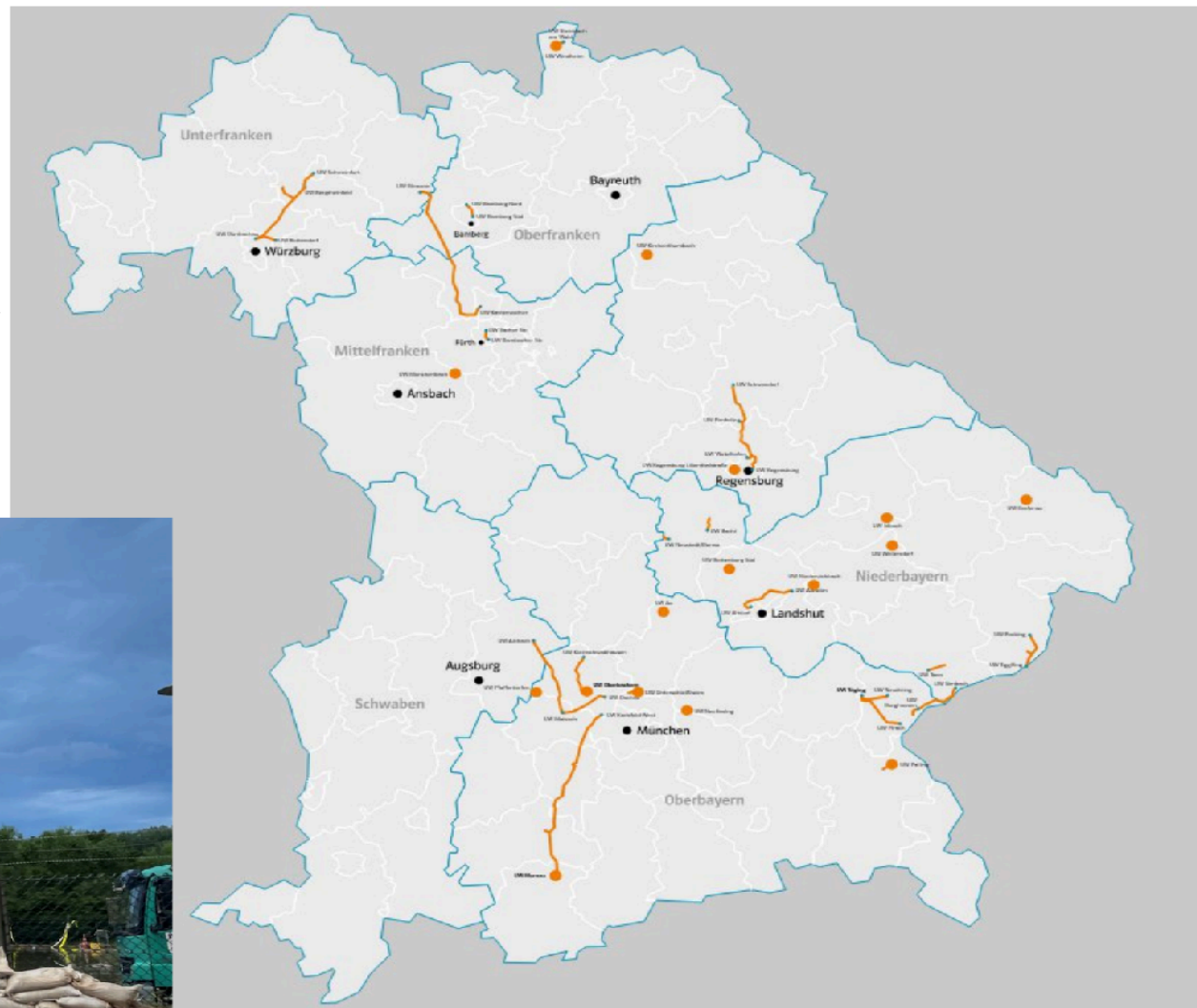


bayernwerk

Upcoming Project:

Dare to Resilience:

Stresstest Analyses for the Electricity Network



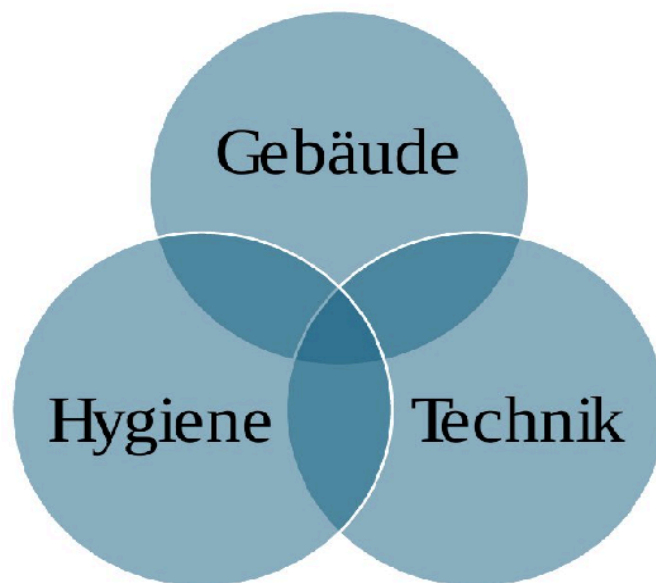


Zukunft Bau / Future Construction

Upcoming Project Proposal

Baulicher und technischer Hitzeschutz in Krankenhäusern und Pflegeeinrichtungen

Herausforderungen & Ziele



↳ Aktionsplan Hitzeschutz



POTSDAM-INSTITUT FÜR
KLIMAFOLGENFORSCHUNG

